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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,738	07/31/2003	Mi Sook Nam	8733.444.10-US	1411

30827 7590 09/20/2005

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1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

HON, SOW FUN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,738

Applicant(s)

NAM, MI SOOK

Examiner

Sow-Fun Hon

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/06/05.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

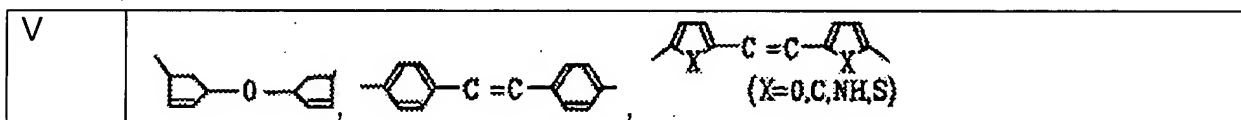
- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Election/Restrictions

1. Applicant's tacit confirmation of the species election of Group V, shown below, in the reply filed on 07/06/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).



Withdrawn Rejections

2. The 35 U.S.C. 102(b) rejection over Yanigasawa has been withdrawn due to Applicant's remarks dated 07/06/05, stating that Applicant's polymer main chain does not contain any portion which is similar to the drawn out polymer of Yanagasawa.

New Rejections

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

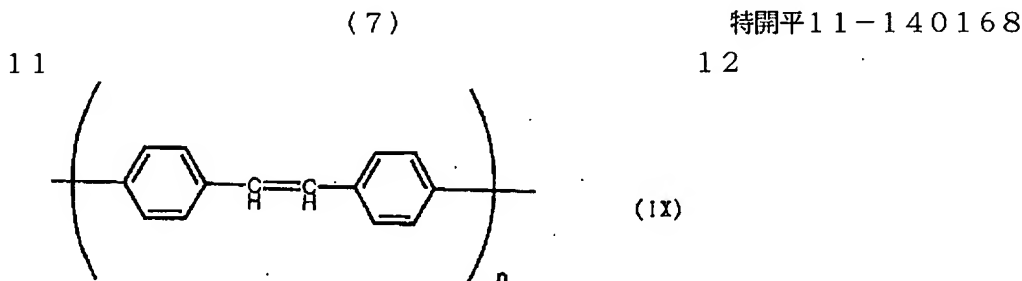
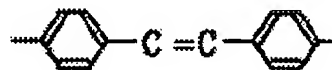
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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

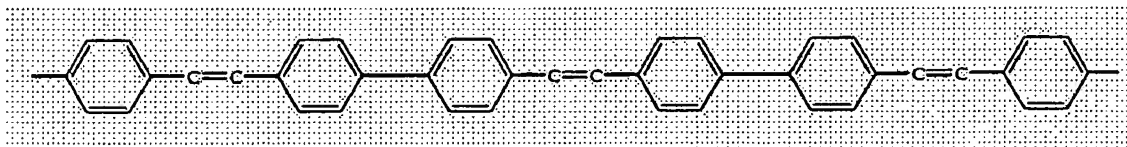
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 33 are rejected under 35 U.S.C. 102(a) as being anticipated by

Yamamoto (JP 11-140168), regarding component A species



The polymer disclosed by Yamamoto above (formula (IX), page (7)) is the same as the one drawn out by Applicant in the remarks section dated 07/06/05, for chemical formula 1, when $b = c = 0$, and $a = 1$, as shown below.



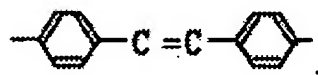
A chemical composition and its properties are inseparable. If the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir.

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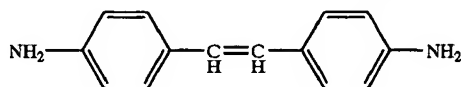
1990). See MPEP 2112.01. Therefore the material of Yamamoto with the photo-reactive ethenyl group in a polymer main chain, when $b = c = 0$, and $a = 1$, is a photo-alignment material.

4. Claims 1-2, 33 are rejected under 35 U.S.C. 102(e) as being anticipated by

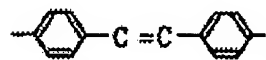
Tomioka (US 6,682,783), regarding component A species



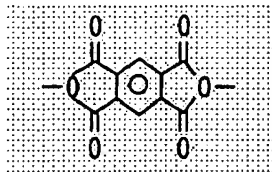
(Chemical Formula 3)



Tomioka teaches a photoalignment material (column 9, lines 45-50) comprising chemical formula 3 of Tomioka shown above, which has a photo-reactive ethenyl group. Chemical formula (3) of Tomioka, containing stilbene as a diamine, and 4,4'-diaminodiphenylmethane are reacted in an equal mole ratio with pyromellitic acid anhydride to form a polyamic acid (column 18, lines 35-50). Therefore in the polyamic acid product of Tomioka, the photo-reactive ethenyl group is in the polymer main chain, such that the stilbene group in chemical formula (3) of Tomioka corresponds to the



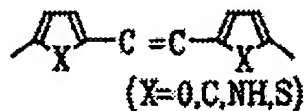
component A of Applicant, the $-NHCO-$ in the polyamic acid of Tomioka corresponds to the B component of Applicant, and the pyromellitic acid anhydride component corresponds to the



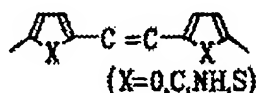
component C of Applicant, $a > 0$, $b > 0$, $c > 0$.

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5. Claims 1-2, 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiga (US 5,486,560), regarding component A species



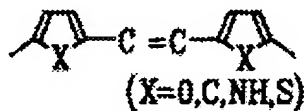
Shiga teaches poly(3-alkylthienylenevinylene (column 2, line 52), the repeat unit of which is component A of Applicant, corresponding to



X = S, and a = 1, b = c = 0. A chemical composition and its properties are inseparable.

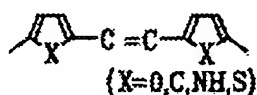
If the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01. Therefore the material of Shiga with the photo-reactive ethenyl group in a polymer main chain, when b = c = 0, and a = 1, is a photo-alignment material.

6. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Gandini (US



6,270, 938), regarding component A species

Gandini teaches copolymers containing furylvinylidene, thienylvinylidene or pyrrolylvinylidene which is component A of Applicant, corresponding to



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X = O for furylvinylidene, X = S for thienylvinylidene, and X = N for pyrrolylvinylidene and $a > 0$, $b > 0$, $c \geq 0$. A chemical composition and its properties are inseparable. If the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01. Therefore the material of Gandini with the photo-reactive ethenyl group in a polymer main chain, wherein $a > 0$, $b > 0$, $c \geq 0$, is a photo-alignment material.

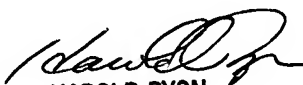
Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon.
Sow-Fun Hon

09/14/05


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

9/14/05